

Iron River Hatchery Highlights

U . S . F I S H & W I L D L I F E S E R V I C E

RETIRED BROOD FISH FIND A HOME

BY CAREY EDWARDS



Above: Fish are sometimes stocked through the ice. Chopping a hole large enough for fish weighing up to four pounds can pose a challenge.

Over a five week period, a local hiking group would meet hatchery staff and assist with unloading the fish into the water. Some of the treks were strenuous and included loading fish in travel coolers and lugging them down an eighth of a mile rocky trail, walking down steep embankments which were oftentimes icy or shuttling fish in otter sleds to a hole chopped in the ice. Iron River NFH staff were very appreciative of the help from the hiking group. Iron River is happy to put these fish to good use while forging stronger ties with local fisherman and enjoys hearing stories about “lunkers” caught and the one that got away.



Iron River National Fish Hatchery (NFH) raises approximately 2 million lake trout and coaster brook trout for restoration purposes in the upper Great Lakes. Roughly 4,000 adult fish are maintained to produce these numbers. Adult brood fish are “retired” as their efficiency at producing eggs declines, egg/fish requests decline or space is needed for new brood fish. The hatchery staff makes every effort to place these fish in the local fishery. Working with the Wisconsin Department of Natural Resources, Iron River NFH was able to stock over 1,400 two to four pound coaster brook trout in four area lakes (Wanoka, Perch, Beaver and Anderson) located in Bayfield and Douglas Counties.

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Above: Stocking fish can be arduous work. Members of a local hiking club push and pull brook trout over and around fallen trees and rocks. Below: Brook trout are netted into coolers for transport to the lake.



Below from left to right: Hatchery staff and hiking club members meet before unloading the fish into coolers and transporting them to the lake where they are released.

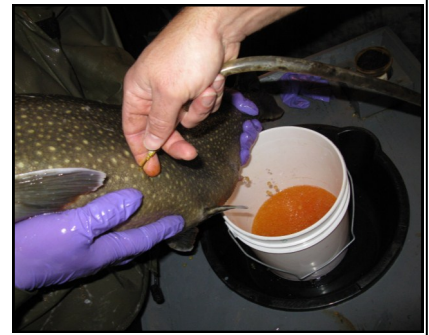


NINE YEAR OLD KLONDIKES SHOW THEY CAN GET IT DONE BY NICK STARZL

Since 1995, the Iron River National Fish Hatchery (NFH) has been working towards providing Klondike Reef lake trout for restoration into the Great Lakes. They are called Klondikes because their parental stock originated from the Klondike Reef in eastern Lake Superior, south of Caribou Island. These lake trout are thought to be a missing top predator in deep water habitats of Lake Michigan and Lake Erie. Klondike spawning has not mirrored the reproductive successes of other lake trout strains found in hatcheries. The Klondike fish grows well in captivity, but producing viable eggs is a problem. Typi-

cally, from spawn to hatch, Klondike eggs have only averaged around 25% survival. Compared to other strains which average around 75%, that is a 300% drop in production. Low egg survival makes it difficult to meet egg requests on an annual basis. Furthermore, more broodstock are needed on station in order to offset the loss. More fish need more space and more food, which costs more money. Unsatisfactory egg survival may however be a thing of the past. In 2012, egg production made a significant increase due to several changes which occurred throughout the year, as well as during the spawning

process. These changes allowed Iron River NFH staff to meet its own egg request in order to produce 200,000 yearling lake trout for a spring 2014 Lake Michigan stocking, and meet a portion of Allegheny NFH's request for Lake Erie management objectives. This would be the first time that Iron River has been able to achieve this level of success. If this continues, Klondike broodstock numbers could be tailored to meet egg commitments with fewer fish, which will open up resources at Iron River NFH for other Great Lakes restoration activities.



Above: Lake trout eggs are harvested for fertilization. Eggs are shipped to other entities as well as incubated at Iron River.



EGG TRANSFERS COMPLETE BY CAREY EDWARDS

The Iron River National Fish Hatchery maintains approximately 4,000 adult lake trout and coaster brook trout. These fish are spawned each fall and eggs are collected for restoration purposes in the Upper Great Lakes. Eyed eggs are shipped to other entities, including federal, state and tribal agencies, in and out of the region.

This year 190,000 lake trout eggs were shipped to Allegheny NFH, while also providing 360,000 eggs for production needs at Iron River. Almost 800,000 brook trout eggs in total were shipped to US Geological Survey, Genoa NFH, Redcliff Tribal Hatchery, Grand Portage Indian Community and Keweenaw Bay Indian Community, not including 60,000 eggs to meet goals at Iron River. Instead of destroying surplus eggs, Iron River NFH was able to utilize 365,000 brook trout eggs by sending them to the Eastern Band of Cherokee Indians located in North Carolina.

Iron River also received 1.85 million Lake Trout eggs from both in and out of region, from Sullivan's Creek NFH and Saratoga NFH, this year. Eggs from Sullivan's Creek NFH are Seneca Lake and Parry Sound strains, while Saratoga NFH provides a Lake Michigan strain of Lake Trout called Lewis Lake.

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Why do hatcheries ship eggs? Not every hatchery is a brood facility, meaning that not every facility holds adults and completes the egg-taking process. These non-brood facilities need a source of fish or fish eggs to fulfill their mission and fish production goals. That is where the brood facility "takes their order" and plans for the amount of eggs and which strain will be given to the other facilities. At Iron River, we rear certain strains for Great Lakes Restoration. However, the

strain that fish managers want for the south end of Lake Michigan is not always the particular strain of brood that Iron River NFH rears. Therefore, we also receive eggs from other facilities, to meet our production goals.

Why eggs not fish?

You can disinfect eggs and not fish. The main purpose of all hatcheries is to culture healthy fish for the public. To reach that goal, we prefer not to ship fish from hatchery to hatchery, because we may also be shipping disease.

Do you ship eggs in water?

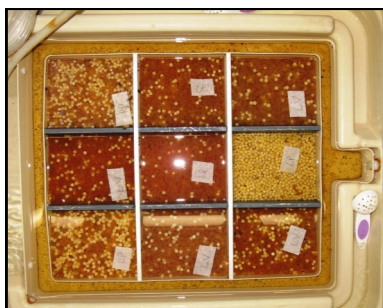
No. After the eggs are disinfected for shipping to another facility, they are wrapped in wet cloth diapers and layered on perforated Styrofoam trays and placed in coolers especially made for egg shipping. The top tray is loaded with ice that slowly melts and allows the fish in the eggs to breathe.

After eggs eye-up (pictured above), they are run through an egg picker, measured using volumetric displacement (below center) and packaged in wet cloth diapers (below bottom) for shipment to other entities in and out of the region.





Above: Study eggs are disinfected and water hardened before subsamples of each female are taken, incubated (below), and evaluated after eye-up.



measure up, averaging between 3-35%. This equates to a lot of work and little to show for it. As the fish aged and fecundity increased,

LHRHA STUDY BY CAREY EDWARDS

The Klondike strain of lake trout entered the hatchery system in 1995 and originated from wild gametes collected from lake trout captured on Klondike Reef in northeastern Lake Superior. They are considered a "humper" strain as they live in water greater than 600 feet and come up to the reef to spawn. Hatchery stockings of this strain have been documented to perform well in deep water areas of Lake Erie.

Currently, Iron River National Fish Hatchery (IRNFH) has two mature captive lines that were created in 2003. These fish were spawned for the first time in 2008 and producing viable eggs proved to be problematic and unsuccessful. For the last five years, these fish and their eggs have been studied tirelessly and spawning techniques, incubation methods and diet formulations have been honed and then honed again, with minimal success in improving survivability. Compared to other lake trout strains with >70% eye-up, Klondikes don't

IRNFH has had some small successes along the way. Two brood lines were created in 2010 and eggs successfully turned into production fish stocked into waters of Lakes Erie and Michigan.

This past fall, yet another study presented itself with a collaboration with Penn State University using a chemical called luteinizing hormone releasing hormone analog (LHRHa). LHRHa is a synthetic compound similar in structure to the natural LHRH hormone in mammals. Through a sequence of events involving the pituitary gland and ovaries/testis, an end result occurs that can hasten the maturation of eggs during the final stages of egg production.

One line was chosen (A line) for the study with three treatments being administered; 10ug, 20ug, and saline (control) solution. 28 fish were randomly chosen from the population for each treatment group, marked with an identifying fin clip, weighed and injected with a dosage of "solution". The following week, fish were checked for ripeness and spawned accordingly. All fish in the 10ug and 20ug groups were ready to spawn while about half of the control group needed an additional two weeks to complete maturation.

The next step in the study was to individually incubate a subsample of each female's eggs to compare percent eye-up by treatment group. The remainder of each female's eggs was pooled by treatment group and incubated. After eye-up occurred, each female's eggs were evaluated, pooled by treatment group, and percent eye-up was calculated for individuals as well as the pooled groups. The average eye-up for individual was as follows: 10ug=62.8%; 20ug=62.7%; control=51.9%. The results from the pooled treatment groups and fish not included in the study are as follows: 10ug=69.7%; 20ug=68.4%; control=51.5%; non-study A=32.4%; non-study B=35.4%.

The increased survival has allowed us for the first time in Iron River's history to produce enough eggs to meet our production goals and all egg requests for Klondike Reef lake trout. With continued success using LHRHa, brood stock numbers could be tailored to open up resources for other Great Lakes restoration activities.



FALL DISTRIBUTION

BY SHAWN SANDERS

October can become a busy time of the year at Lake Trout facilities. Hatchery and regional tagging personnel are scrambling to tag and clip all fish, put them into pre-assigned raceways, and stock out fish that are designated for shore-stocking. Shore stocking is exactly what it sounds like, a fish truck pulls up to an area of the lake where there is accessibility and ease of stocking the fish. The driver attaches a long hose to the fish tank (long enough to reach the water) and opens a gate valve to release the fish to their new "home". This year Iron River National Fish Hatchery hauled Lake Trout from the hatchery to four sites around Lake Michigan: Kewanee, Manitowoc, and Milwaukee, WI, along with New Buffalo, MI. Completion of this effort requires all

staff, to efficiently stock fish, and complete daily hatchery projects. Each biologist and the assistant project leader maintain Commercial Driver's Licenses, so everyone can drive and help complete Iron River's mission. All fall fingerling trips require an overnight stay following the stocking event, with the drivers returning the following morning.

As the fall fish are stocked into the Great Lakes there becomes available space for yearlings to be evenly distributed throughout the remaining 24 raceways at Iron River NFH. This thinning of fish density around the facility allows staff to handle fish one more time at "final loading" in the spring of 2013, it also provides a healthy (low density) environment for fish to grow strong.



Above: Shawn Sanders, biologist from Iron River National Fish Hatchery, inspects stocking site. Below: New Buffalo Police-man checks out the evening stocking event.





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TO:

STAFF UPDATES



Staff photo: From left to right and out of uniform: Hatchery Manager Dale Bast, Assistant Hatchery Manager Nick Starzl, Biologist Shawn Sanders, Biologist Paul Larson, Bio-Technician Brandon Keesler, Biologist Carey Edwards, Administrative Technician Laurie Gucinski, unknown snowperson.




Welcome Brandon Keesler! Brandon joined the staff at the Iron River National Fish Hatchery in mid December. Brandon hails from Viroqua, WI and has two sisters and a brother. He attained his Bachelor of Science from Stevens Point in Fish Biology. Since high school, Brandon has been involved with the Fish and Wildlife Service through the YCC and STEP programs working at Genoa NFH and as a temporary and term employee at the Green Bay FWCO and Livingston Stone NFH in California where he worked with endangered delta smelt. Brandon's hobbies include anything outdoors; hunting, fishing and trapping. 

Calendar of Events:

February: Candlelight Trek, (Feb 23, 6-8 pm)
 March: Spring shore stocking, school aquarium wrap-up
 April: Distribution begins

FRIEND'S GROUP

The Friend's of the Iron River National Fish Hatchery were instrumental in orchestrating the volunteer crew that helped stock over 1400 coaster brook trout in local lakes. The Friends are looking for a few good men and women. Come check us out at the next meeting, Feb 5th; 1pm, @IRNFH. The Friends are recruiting officers, board members and general members alike. Membership information can be found at the Friend's website: <http://ironriverhatcheryfriends.org>, by emailing the Friends at something-fishy@ironriverhatcheryfriends.org or by contacting the hatchery office via the information above. 



From left to right: Assistant Hatchery Manager, Nick Starzl and Friends Treasurer/Secretary, Jane Snilsburg, take a breather after lugging otter sleds with coolers full of brook trout for stocking in Beaver Lake.